SHURE®

LEGENDARY
PERFORMANCE™

WIRELESS SYSTEM

PSM®300 USER GUIDE

取扱説明書

사용자 안내서

Pengguna Panduan

用户指南

繁體中文

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IMPORTANT SAFETY INSTRUCTIONS

1. READ these instructions.
2. KEEP these instructions.
3. HEED all warnings.
4. FOLLOW all instructions.
5. DO NOT use this apparatus near water.
6. CLEAN ONLY with dry cloth.
7. DO NOT block any ventilation openings. Allow sufficient distances for adequate ventilation and install in accordance with the manufacturer's instructions.
8. DO NOT install near any heat sources such as open flames, radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat. Do not place any open flame sources on the product.
9. DO NOT defeat the safety purpose of the polarized or groundingtype plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wider blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. PROTECT the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. ONLY USE attachments/accessories specified by the manufacturer.
12. USE only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/ apparatus combination to avoid injury from tip-over.
13. UNPLUG this apparatus during lightning storms or when unused for long periods of time.
14. REFER all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. DO NOT expose the apparatus to dripping and splashing. DO NOT put objects filled with liquids, such as vases, on the apparatus.
16. The MAINS plug or an appliance coupler shall remain readily operable.
17. The airborne noise of the Apparatus does not exceed 70dB (A).
18. Apparatus with CLASS I construction shall be connected to a MAINS socket outlet with a protective earthing connection.
19. To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
20. Do not attempt to modify this product. Doing so could result in personal injury and/or product failure.
21. Operate this product within its specified operating temperature range.

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

SAFETY PRECAUTIONS

The possible results of incorrect use are marked by one of the two symbols—"WARNING" and "CAUTION"—depending on the imminence of the danger and the severity of the damage.

⚠	WARNING: Ignoring these warnings may cause severe injury or death as a result of incorrect operation.
⚠	CAUTION: Ignoring these cautions may cause moderate injury or property damage as a result of incorrect operation.

CAUTION

- Never disassemble or modify the device, as failures may result.
- Do not subject to extreme force and do not pull on the cable or failures may result.
- Keep the product dry and avoid exposure to extreme temperatures and humidity.

WARNING

- If water or other foreign objects enter the inside of the device, fire or electric shock may result.
- Do not attempt to modify this product. Doing so could result in personal injury and/or product failure.

  This device is able to produce sound volume higher than 85 dB SPL. Please check your maximum allowed continuous noise exposure level based on your national employment protection requirements.

WARNING

LISTENING TO AUDIO AT EXCESSIVE VOLUMES CAN CAUSE PERMANENT HEARING DAMAGE. USE AS LOW A VOLUME AS POSSIBLE. Over exposure to excessive sound levels can damage your ears resulting in permanent noise-induced hearing loss (NIHL). Please use the following guidelines established by the Occupational Safety Health Administration (OSHA) on maximum time exposure to sound pressure levels before hearing damage occurs.

90 dB SPL at 8 hours	**95 dB SPL** at 4 hours	**100 dB SPL** at 2 hours	**105 dB SPL** at 1 hour
110 dB SPL at ½ hour	**115 dB SPL** at 15 minutes	**120 dB SPL** Avoid or damage may occur	

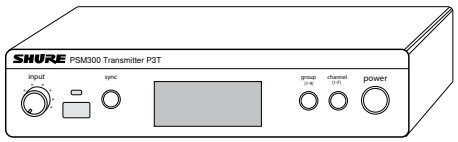
PSM®300

The PSM300 Personal Monitor System delivers wireless stereo monitoring for improved clarity and reduced feedback over traditional stage wedges. Performers can create their own custom mixes by adjusting the stereo blend and overall volume level at the bodypack, resulting in lower volume on stage and enhanced audio detail. Easy to set up and operate, PSM300 features one-touch frequency syncing and solid wireless RF stability between transmitters and receivers. With rugged, dependable hardware and hard-working technology, Shure PSM300 Personal Monitor Systems deliver a greatly improved monitoring experience on stage.

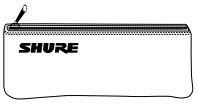
Features

- Send two channels of audio wirelessly to performers onstage
- Solid RF connection over a 300 foot (90 meter) range
- Create a personal mix on each bodypack with adjustable stereo balance or MixMode® two-channel mono blend.
- Up to 90 dB signal-to-noise ratio provides clear, detailed audio at any volume
- Systems available with Shure Sound Isolating™ earphones
- One-touch scan and IR sync quickly and easily assigns a clean wireless channel
- No complicated menus, just simple volume and mix controls that focus on the performance
- All-metal half-rack transmitter
- Slim, lightweight bodypack attaches easily to a belt or guitar strap

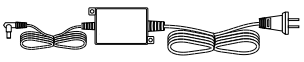
Included Components



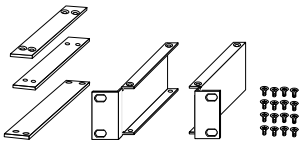
P3T Transmitter



Carrying Bag

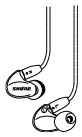


PS23 Power Supply



Rackmount Hardware Kit

P3R or P3RA Bodypack Receiver



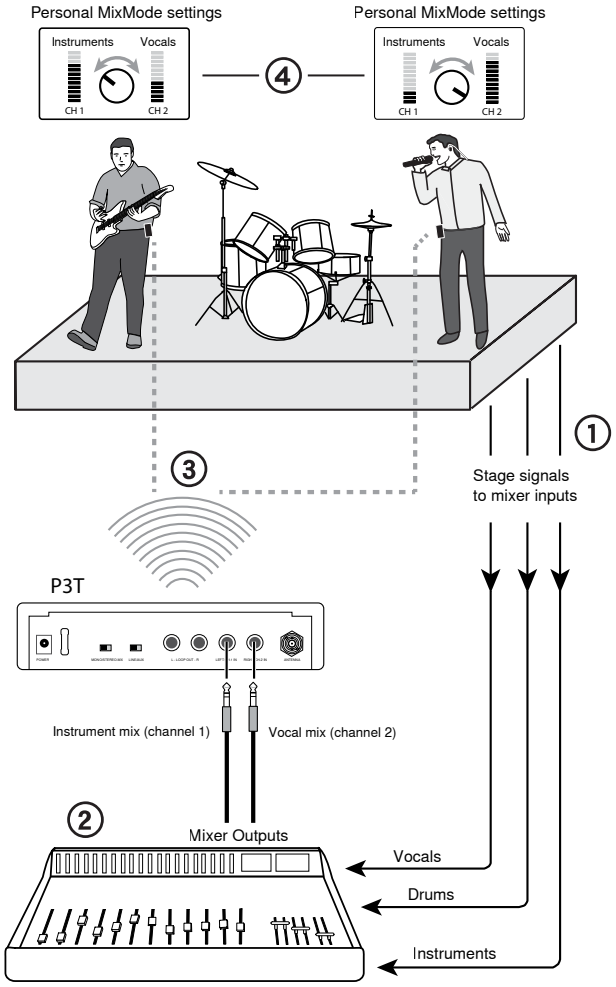
SE112 or SE215 Earphones

(2) AA Batteries*

¼ Wave Antenna

*Not included in Argentina

System Overview



This example shows a typical setup for musical performance. See the System Applications section for additional examples.

① Route audio signals

Send Instrument and microphone signals from the stage to a mixer or PA system.

② Create monitor mixes

From the mixer, create two mixes: one of just the instruments, and a second with just the vocals. Route each of these to separate mixer outputs and connect them to the P3T inputs.

③ Send wireless audio to the performers

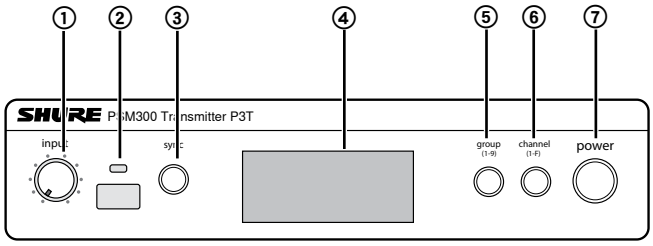
Sync the bodypacks to the P3T transmitter to send the mixes to the performers for in-ear monitoring.

④ Adjust personal mixes

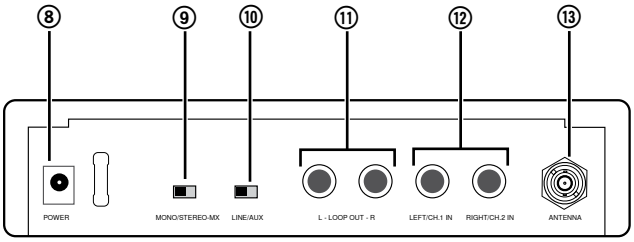
Each performer uses the MixMode knob on the bodypack to control their own mix between the instruments and vocals .

Hardware

P3T Transmitter Front and Rear Panels



P3T Front Panel



P3T Rear Panel

① Input Level Control
Adjusts the level of the incoming audio signal

② IR Sync Window
Sends and receives group/channel data to sync receivers with the transmitter

③ Sync Button
Press to synchronize the transmitter and receiver to the same group and channel

Note: Sync data is sent through the IR sync window

④ LCD Display
Displays audio, RF, and system information

⑤ Group Button
Press to scroll through group settings

⑥ Channel Button
Press to scroll through channel settings

⑦ Power
Turns power on or off

⑧ Power Input
Connect the supplied Shure PS23 external power supply

⑨ Mono/Stereo-MX Switch

StereoMX	Sends a two-channel stereo mix to the receiver
Mono	Sends a summed audio mix to both receiver channels

⑩ Line/Aux Switch
Adjust the input sensitivity using the following as a connection reference:

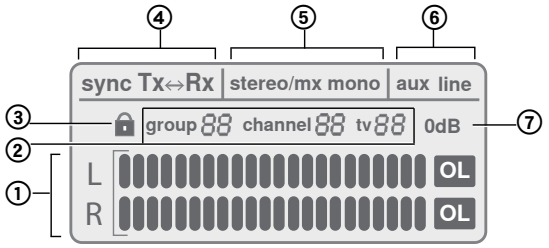
Aux (-10 dBV):	Consumer audio devices, such as computers or portable media players
Line (+4 dBu):	Mixers or other professional audio devices

⑪ Loop Outputs (¼ Inch TRS, Balanced)
Connect outputs to additional PSM systems or other audio devices

⑫ Audio Inputs (¼ Inch TRS, Balanced)
Connect to mixer outputs or other audio sources for monitoring by the performers

⑬ BNC Antenna Connector
Connect the supplied ¼ wave antenna, directional antenna, or a Shure P3AC antenna combiner

P3T Transmitter Display



① Audio Input Meter
Indicates the audio signal level

② Group / Channel / TV Setting
Displays selected group and channel settings and the corresponding television channel

Note: the TV indicator only applies to U.S.A. channels, and remains blank in other regions

③ Lock Status
To lock or unlock the controls, press and hold the group and channel buttons until the lock icon appears/disappears.

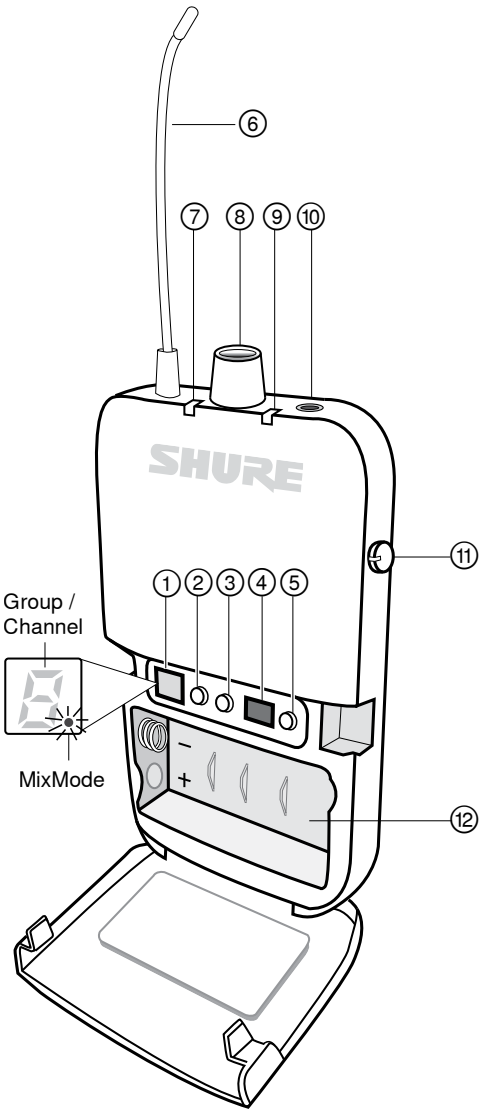
④ Sync Status
Appears after a successful sync between the transmitter and receiver. The direction of the sync is shown as `Tx>Rx` (transmitter sends frequency to receiver) or `Tx<Rx` (receiver sends frequency to transmitter).

⑤ Stereo-MX / Mono Mix
Indicates whether the audio sent to the receiver is a single or two-channel mix (corresponds to the `Stereo-MX/Mono` switch on the rear panel).

⑥ Aux / Line Mode
Indicates the input sensitivity setting (corresponds to the `Aux/Line` switch on the rear panel)

⑦ 0 dB Indicator
Turns on when input signal reaches 0 dB. Refer to the section on adjusting gain and listening volume for information on how to use this icon.

P3R Wireless Receiver



P3R

① Display
Shows group, channel, and MixMode settings

② Group Button
- Press to display group
- Press and hold to edit the group, then press to scroll when display flashes

③ Channel Button
- Press to display channel
- Press and hold to edit the channel, then press to scroll when display flashes

④ IR Sync Window
Sends and receives sync data between the receiver and transmitter

⑤ Scan Button
- Press and hold to perform a **group scan**
- Press to perform a **channel scan**

Note: A channel scan selects the best channel in the current group. A group scan finds the group with the most open channels and selects the first available channel in that group.

⑥ Antenna

⑦ Power LED Indicator
Indicates when receiver is on, remaining battery life, and when power-save mode is active. See battery life table for more information.

⑧ Power Switch / Volume Control Knob
Turns the receiver on/off and adjusts master headphone volume level

⑨ RF LED Indicator (blue)
Illuminates when tuned to an active transmitter group and channel

⑩ Headphone Output
Connects to earphones or headphones

⑪ MixMode Control Knob
- When operating in MixMode, this knob blends channels 1 and 2 into a single mix
- When operating in stereo mode, this knob adjusts the left/right balance

⑫ Battery Compartment
Holds 2 x AA batteries

P3RA Receiver

For more demanding applications, Shure offers the P3RA receiver, which features all-metal construction and advanced menu navigation in addition to the features included on the P3R receiver. For more information, please visit www.shure.com.

Battery Life

LED Behavior	Remaining Runtime (Hours)
Green	5-7
Amber	1-3
Red (solid)	0.5-1
Red (flashing)	0

Battery life was measured using Energizer™ alkaline batteries, under the following conditions:

- Transmitter sensitivity: Line (+4dBu)
- Audio output from receiver: 100 dB through Shure SE112 earphones

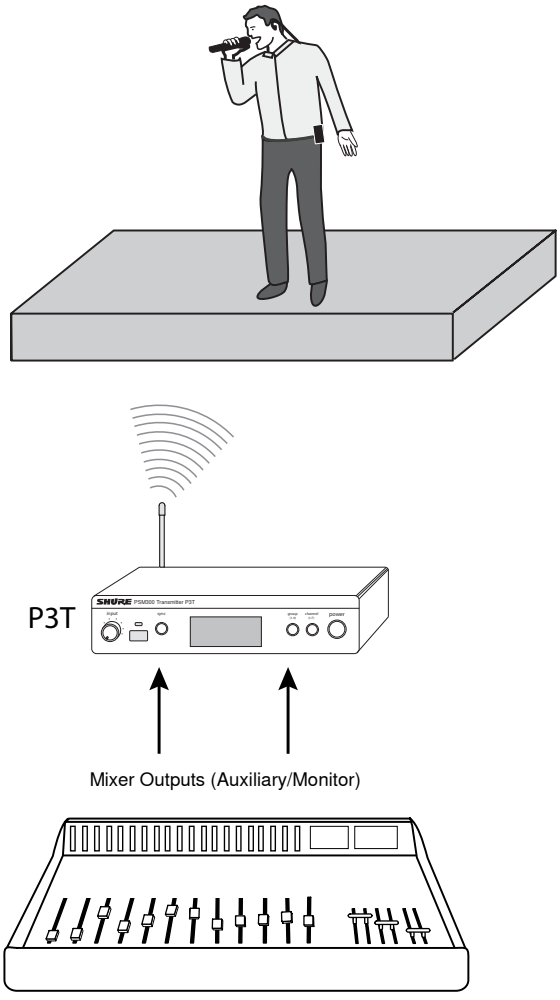
Power-save mode: When there are no earphones plugged in, the receiver enters power-save mode to preserve battery life. The LED slowly fades on/off in this mode and continues to display the color that represents the remaining battery life.

Applications

Refer to the following PSM300 system scenarios prior to installation. Understanding the configuration options before setting up helps to identify signal routing requirements and plan for future expansion. Specific information on how to set up the PSM300 system and create mixes for monitoring can be found in the "System Setup and Configuration" and "Operation" sections of this user guide.

Single System for an Individual Performer

This configuration provides in-ear monitoring in a solo performance, or in a group performance in which only one person requires wireless monitoring. This system can be expanded for multiple performers by using additional P3R bodypack receivers tuned to the same transmitter.

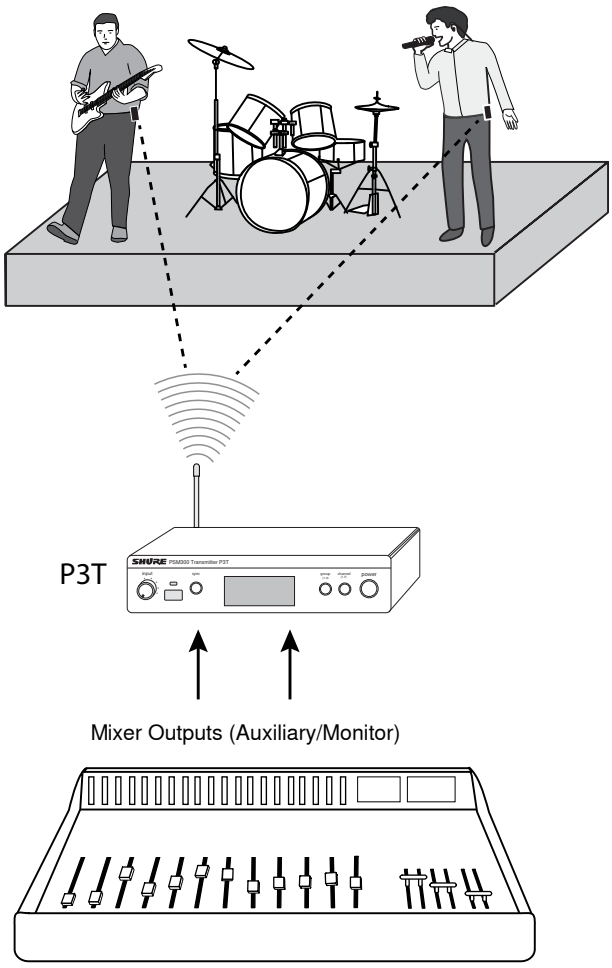


Single Transmitter with Multiple Receivers

Multiple performers can monitor audio from the same transmitter and still adjust the signal at their bodypack to personalize the mix. Simply tune each bodypack to the same frequency as the transmitter and use the MixMode knob to adjust the mix.

MixMode or Stereo Operation:

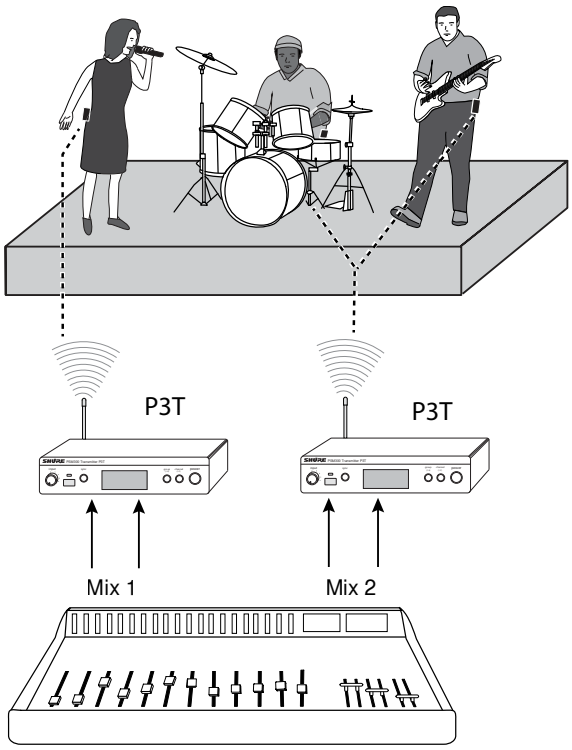
Each performer has the option of setting their bodypack to `MixMode` or `Stereo` when the transmitter is set to `Stereo-MX`. When the bodypack is powered on, it is set to stereo by default. To operate in MixMode, hold the `GROUP` button when turning the power on. For information on these modes, see "MixMode and Stereo Monitoring".



Multiple Transmitters with Separate Mixes

When several performers in a group have different monitoring requirements, multiple PSM300 systems may be used simultaneously to send different mixes through each transmitter. This setup requires a mixer with two monitor/auxiliary outputs for each transmitter.

Tip: To simplify setup in applications that involve multiple transmitters, Shure offers the P3AC antenna and power distribution system, which supplies up to four PSM transmitters with power and RF from a single source.



Signal Routing to External Devices (Combination Systems)

The LOOP outputs pass audio to an external device, such as other personal monitoring systems, recording devices, or stage monitors. The signal at the LOOP outputs is identical to the signal coming from the mixer, and is not affected by the transmitter volume or input sensitivity (line/aux) settings. This makes the LOOP outputs particularly useful when using a mixer that has one or two monitor/auxiliary sends.

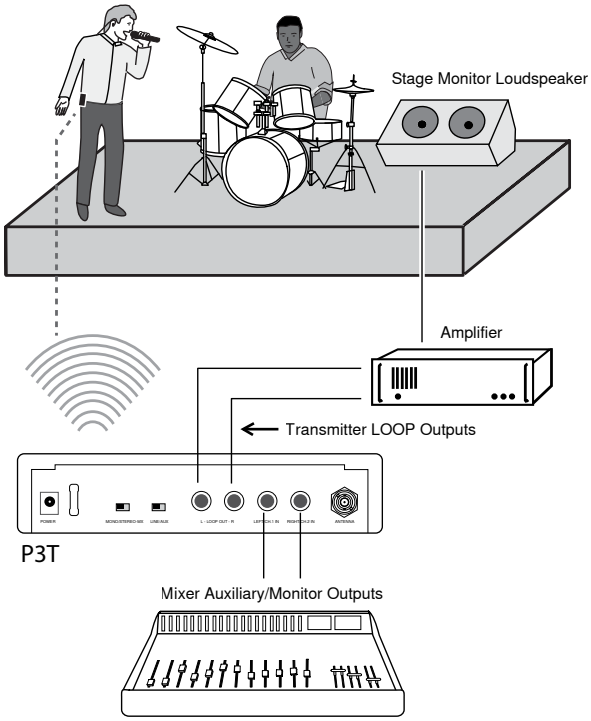
Using the PSM300 simultaneously with Loudspeakers:

A combination monitoring system can be used, where some of the performers are using the PSM300 wireless system and others are listening through loudspeakers on stage.

Note: If using passive stage monitors, the P3T outputs must be connected to an amplifier. Active (amplified) speakers can be connected directly to the P3T outputs.

Using the PSM300 Combined with Other Wireless Monitoring Systems

In a scenario where two performers have their own wireless monitoring systems (one Shure PSM300 system and one third-party system, for example), the PSM300 can pass the signal from the mixer on to the second monitoring system.

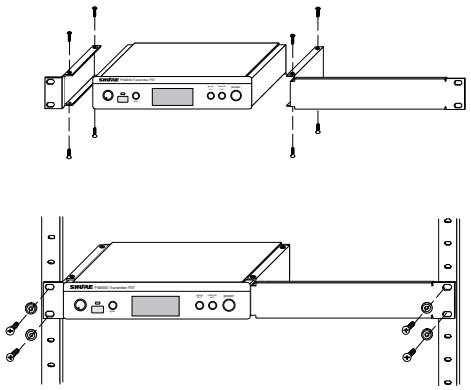


System Setup and Configuration

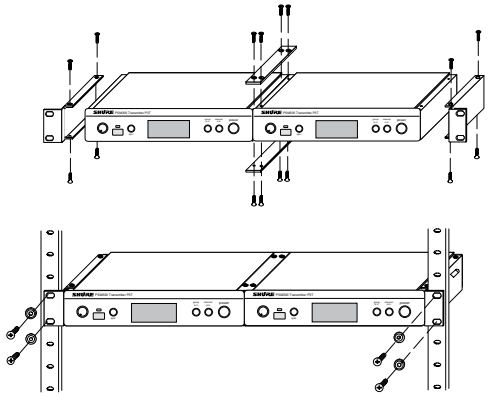
Rack Mounting

The P3T Transmitter can be mounted in a standard 19-inch rack. Up to two units can be mounted in a single rack space. If using multiple P3T transmitters, the Shure PA411 Antenna Combiner system can be used to consolidate and distribute all RF and power for up to four transmitters.

Single unit



Dual-mounting two units

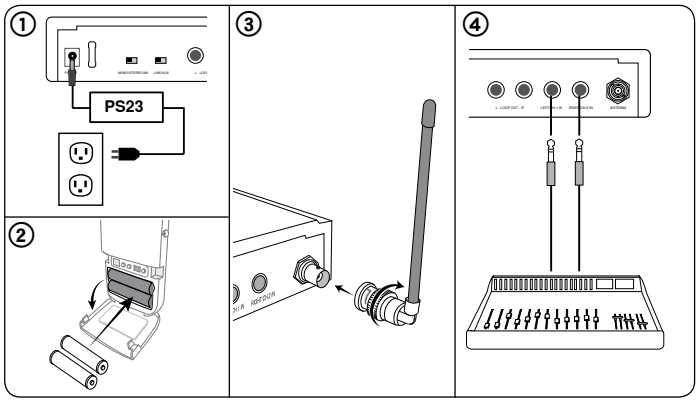


Note: Always use both straddle bars when mounting two units.

Power, Audio, and RF Connections

1. Use the power adapter to connect the P3T to an AC power source.
2. Install 2 AA batteries in the bodypack receiver.
3. Attach the antenna to the BNC antenna connector on the P3T rear panel.
4. Connect the mixer or audio source to the P3T audio inputs using ¼ inch balanced cables.

Important: When connecting to only one transmitter input, use the LEFT/CH1 input. Set the transmitter to MONO to hear audio on both channels of the receiver.



Scanning for the Best Open Channel

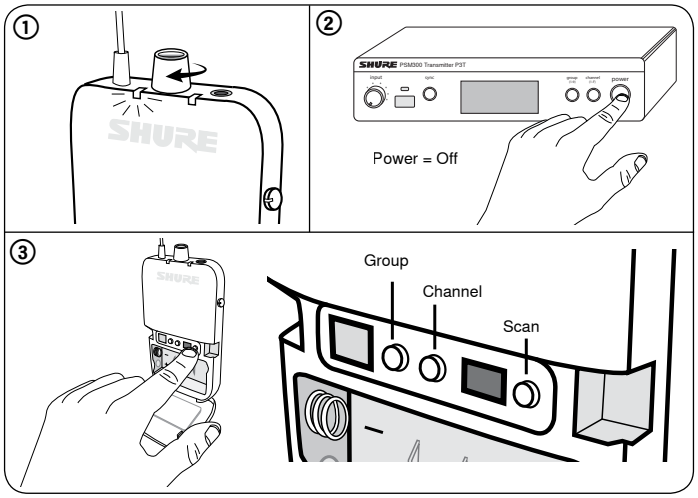
Follow these steps to scan the RF environment and find the best available frequency for operation:

1. Turn on the bodypack receiver and any potential sources of interference, including wireless systems, computers, audio equipment, cellular phones, LED panels, and other electronic devices that will be in use during a performance.
2. Make sure the P3T transmitter is **OFF**.
3. Position the receiver in the performance area and press SCAN to survey the available channels within the current group setting.

If using several PSM300 systems or operating in a location with a high volume of wireless devices, perform a group scan first, followed by a channel scan:

Group Scan: Press and hold the SCAN button on the receiver.

Channel Scan: Press the SCAN button on the receiver.

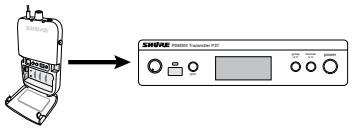


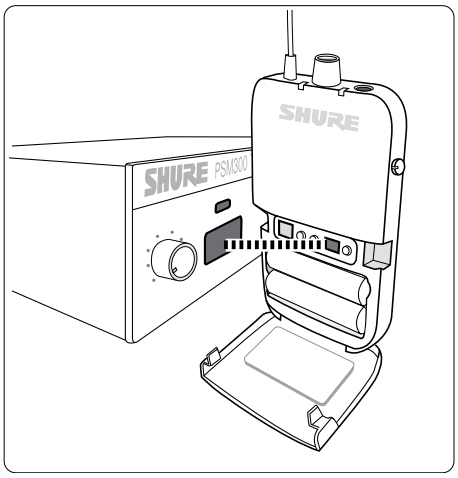
Creating a Wireless Connection Between Receivers and Transmitters (Sync)

To pass audio from the transmitter to the receiver, both must be tuned to the same frequency. The easiest way to configure the system is to use the automatic sync feature. This transfers group and channel settings with a press of a button. Based on your system configuration, use one of the following processes to sync the components:

Single Transmitter and Receiver

The following sync procedure should be used with a setup that consists of a single transmitter and receiver, unless a group/channel setting has been assigned prior to a performance.





Align the IR windows to sync the receiver and transmitter

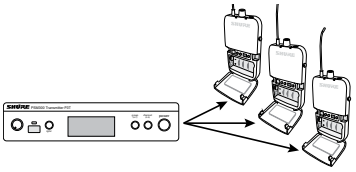
Sync from receiver to transmitter:

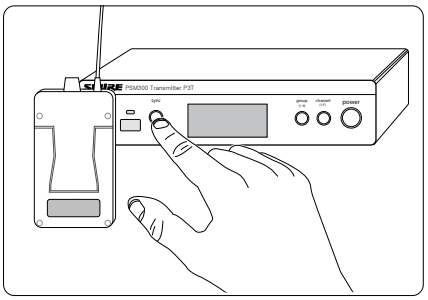
1. Perform a scan on the receiver (see "Scanning for the Best Open Channel" for best practices).
2. Align the IR windows on the receiver and transmitter. The windows should be 6-11 cm apart.
3. Press the SYNC button on the transmitter while the blue RF LED on the receiver is flashing.
4. The Transmitter displays SYNC when the sync is successful. The arrow between Rx (receiver) and Tx (transmitter) shows the direction of the sync.

   Note: When the RF LED on the receiver is flashing after performing a scan, the receiver sends its frequency setting to the transmitter. After it stops flashing, pressing SYNC sends the frequency setting from the transmitter to the receiver.

Single Transmitter and Multiple Receivers

The following sync procedure should be used with a setup that consists of a single transmitter with multiple receivers, or if a specific group/channel setting has been assigned to the transmitter prior to a performance.





Pressing the SYNC button transfers group/ channel data

Sync from transmitter to receivers:

1. Sync the first receiver to the transmitter using the sync procedure for a single receiver. Performing a scan and using the resulting group and channel from the receiver is recommended.
2. Set additional receivers to the transmitter frequency (one at a time) using IR sync:
   - Align the IR windows on the receiver and transmitter and press SYNC.
   - The receiver LED should not be flashing when pressing SYNC.

   Note: Receivers can also be manually tuned to the transmitter if an IR sync is not practical.

Multiple Transmitters and Multiple Receivers

1. Set up the first transmitter and all associated receivers according to the appropriate sync procedure. Keep the transmitter and all receivers from this first system powered on when setting up additional systems.
2. Set up each additional system using the appropriate sync process. Always leave each new system on before setting up an additional one.

Manual Selection

If frequencies have been planned ahead of time, the group and channel can be set manually without performing a scan. Refer to the frequency table at the end of this user guide to identify frequencies for each group/channel setting.

To select group/channel settings on the receiver and transmitter:

1. Press GROUP to scroll through group settings.
2. Press CHANNEL to scroll through channel settings within the selected group.

Operation

Adjusting Gain and Listening Volume

For the best audio quality, start by adjusting the levels from the mixer or audio source, and then adjust levels through the PSM300 system. This approach corresponds to the way that the audio signal flows through the system, and maximizes the signal-to-noise ratio.

Before you begin: verify all signal routing and gain settings at the mixer or source prior to adjusting any levels from the PSM300 system. If the sound is distorted or faint when it enters the P3T transmitter, there is likely an issue elsewhere in the signal chain that needs to be resolved.

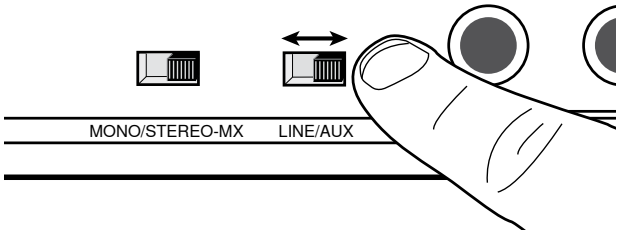
① Adjust Transmitter Levels:

Input Sensitivity

Select the setting that matches the input source:

Line (+4 dBu)	Use with mixers or other professional audio devices that send line-level signals.
Aux (-10 dBV)	Use when connecting consumer audio devices such as portable audio players or computers.

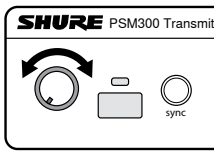
Note: When using consumer audio devices, the output volume of the device should typically be adjusted as close to the maximum setting as possible without distorting or clipping at the output of the device. This maximizes the signal-to-noise ratio.

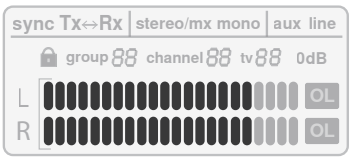


Input Level

Adjust the level so that average levels on the audio meter reach approximately 75% of the full range. The highest levels should occasionally hit the 0dB indicator on the audio input meter, without reaching the OL (overload) indicator.

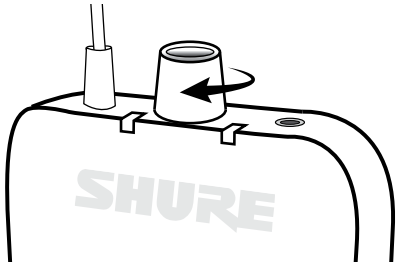
Tip: If a sound check before the performance is possible, everyone should play at the loudest anticipated volume so that attenuation is not required during the performance.





② Adjust Receiver Volume:

After levels are established at the mixer and transmitter, use the headphone volume control on the bodypack receiver to adjust overall listening volume. For information on adjusting the left/right balance or customizing the mix blend, see "MixMode and Stereo Monitoring".



Creating Monitor Mixes

The mix that performers hear on stage is usually different than the mix heard by the audience. In live sound applications, the engineer creates a separate mix to send to the performer by routing the input signals to specified mixer outputs, usually called **Monitor** or **Auxiliary** outputs.

The following scenario demonstrates a generic signal path for monitoring mixes, and may not reflect the routing for all mixer types. Consult the user guide for your mixer for detailed signal routing options.

① Mixer Channel

Each mixer channel controls audio processing and routing for a single audio source. In this example, a vocal microphone is plugged into the mixer channel.

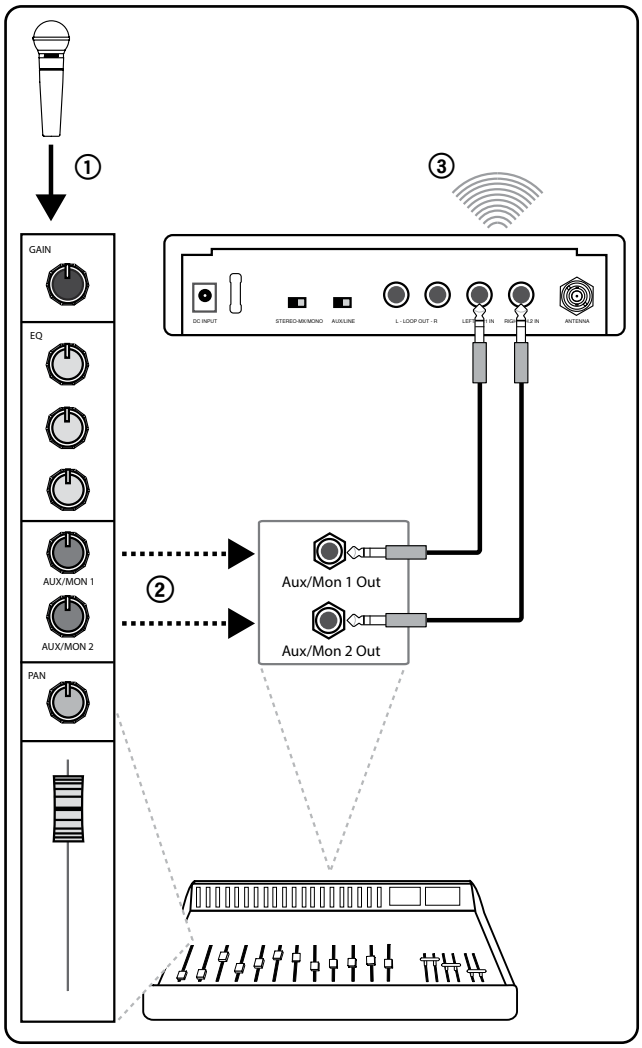
② Monitor/Auxiliary Sends

Adjust the signal levels to send to the monitor/auxiliary outputs, each of which corresponds to a separate monitoring mix. Each of these mixes are sent to separate channels on the P3T transmitter.

Note: The channel faders on most mixers do not affect the volume of the monitor/auxiliary sends.

③ Wireless Transmission

Each monitoring mix is transmitted on a separate channel to the P3R receiver. The MixMode knob on the bodypack adjusts the blend between the audio from channel 1 and channel 2.



MixMode and Stereo Monitoring

The receiver can operate in stereo or MixMode when the transmitter is set to STEREO-MX. In applications that involve multiple bodypack receivers tuned to a single transmitter, some bodypacks can operate in stereo, while others operate in MixMode.

Selecting the Mode

Stereo: The receiver is set to stereo mode by default. To switch from MixMode to stereo, simply turn the receiver off and it will return to stereo mode when powered back on.

MixMode: Press and hold the GROUP button on the bodypack receiver while turning the power on. The MixMode indicator light on the receiver display turns on to confirm the setting. The receiver will return to stereo mode after it has been powered off.

MixMode

Stereo

Audio from channel 1 is heard on the left earphone, while audio from channel 2 is heard on the right earphone. Listening in stereo mode increases separation between the sources on each channel, which can improve clarity when many sources are being monitored. The MixMode knob on the bodypack adjusts left/right balance when operating in stereo mode.

Left (Channel 1) Right (Channel 2)

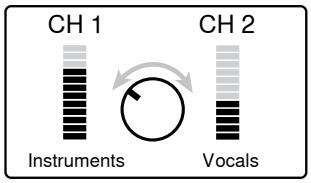
MixMode

MixMode allows performers to adjust the blend between two monitoring mixes (an instrumental mix and a vocal mix, for example). When using MixMode:

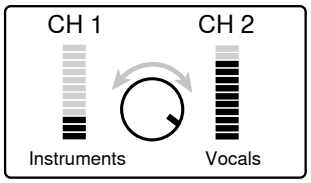
- Each mix is heard through both the left and right earphones
- The MixMode knob adjusts the volume blend between the two monitor mixes (channel 1 and channel 2)
- Each bodypack receiver can dial in a unique blend to meet the monitoring needs of each performer

Adjusting mix levels

In this scenario, an instrumental mix is on channel 1 and a vocal mix is on channel 2:



To hear more of channel one, turn the MixMode knob to the left.



To hear more of channel two, turn the MixMode knob to the right.

When to Use the Mono Setting

In some cases, only a single input on the transmitter is used (if the mixer only features a single monitor/auxiliary output, for example). To ensure that audio is heard on both the left and right earphones:

- Use the LEFT/CH1 input on the transmitter
- Set the transmitter to MONO

Note: When the transmitter is set to mono operation, the MixMode knob will not affect the sound.

Troubleshooting

Problem	Solution
Distorted Audio	• Check the volume levels at the P3T transmitter and verify that the meter is not reaching the overload indicator • Check levels going in and out of the mixer. If audio is distorting anywhere in the signal chain, it will be distorted even if the PSM300 system is not overloading. • Make sure batteries in the receiver are fresh • Verify that the cables are 1/4 inch balanced. If an unbalanced instrument or speaker cable is used, it may introduce noise. **Tip:** To tell the difference, look at the connectors on the cable. The metal connector on a balanced cable has two plastic rings that divide it into three separate sections (tip, ring, sleeve). An unbalanced cable only has a single plastic ring that divides the metal portion into two sections (tip, sleeve). • Check that all cables are plugged all the way into the mixer and the P3T inputs. Sometimes, if a cable is not fully inserted, the signal will be faint and distorted. • Make sure you are using the line-level outputs from the mixer. If you have a powered mixer, do not use the main speaker outputs, as they are amplified signals and will overload the P3T inputs.
No sound from receiver	• Make sure the transmitter and receiver are linked to the same group and channel • Verify levels are registering at the transmitter and that the volume is turned up on the receiver • Check that the receiver is on and that the headphones are properly connected to the receiver
Turning the MixMode knob does not affect the sound	• The Stereo-MX/Mono switch on the rear panel of the P3T may be switched to mono. For the MixMode knob to work, the transmitter must be set to Stereo-MX. • Verify that the signals going from the mixer to the transmitter are not identical • Check that the bodypack is set to MixMode
Low audio output at the receiver	• Check headphone connection and volume level • If only sending a single channel into the P3T transmitter, check it the MixMode knob isn't turned towards a silent channel. If using one channel, set the P3T transmitter to mono mode.
Audio or RF drops out	• Perform a scan to ensure the receiver is on a clear (available) frequency • Make sure there is a line-of-sight path between the transmitter antenna and the bodypack receivers • Verify that other wireless devices that are being monitored, such as wireless microphones, are not experiencing RF dropouts • If using an antenna other than the one included with the system, make sure it is designed to operate in the correct frequency range
IR sync failure	Verify distance between receiver and transmitter is between 6-11 cm

Optional Accessories and Replacement Parts

Bodypack receiverBodypack receiver	P3R
Half-rack TransmitterHalf-rack Transmitter	P3T
Universal bodypack receiverUniversal bodypack receiver	P3RA
Antenna and power distribution systemAntenna and power distribution system	PA411
Wired PSM bodypackWired PSM bodypack	P9HW
Dynamic MicroDriver earphonesDynamic MicroDriver earphones	SE112
Dynamic MicroDriver earphonesDynamic MicroDriver earphones	SE215
High-definition MicroDriver earphones with tuned bass portHigh-definition MicroDriver earphones with tuned bass port	SE315
High-definition earphones with dual MicroDriversHigh-definition earphones with dual MicroDrivers	SE425
High-definition earphones with triple MicroDriversHigh-definition earphones with triple MicroDrivers	SE535
High-definition earphones with quad MicroDriversHigh-definition earphones with quad MicroDrivers	SE846
Carrying/Storage BagCarrying/Storage Bag	95A2313
1/4 Wave Antenna (748–865 MHz) for SLX Wireless System1/4 Wave Antenna (748–865 MHz) for SLX Wireless System	UA400
1/4 wave antenna (470-752 MHz)1/4 wave antenna (470-752 MHz)	UA400B

Frequency Range and Transmitter Output Power

BAND	RANGE (MHz)	Output Power (mW)
G20	488 - 512	30
H8E	518 - 542	10
J10	584 - 608	30
J13	566 - 590	30
JB	806 - 810	10
K12	614 - 638	30
K3E	606 - 630	30
L18	630 - 654	10
L19	630 - 654	30
M16	686 - 710	30
M18	686 - 710	10
Q25	742 - 766	30
R12	794 - 806	10
S8	823 - 832	20
T11	863 - 865	10
X7	925 - 937.5	10

NOTE: This Radio equipment is intended for use in musical professional entertainment and similar applications. This Radio apparatus may be capable of operating on some frequencies not authorized in your region. Please contact your national authority to obtain information on authorized frequencies and RF power levels for wireless microphone products.

Specifications

PSM300

RF Carrier Range
488-937.5 MHz
varies by region

Compatible Frequencies
Per band
up to 15

Tuning Bandwidth
24 MHz Maximum
Note: varies by region

Operating Range
environment dependent
90 m (300 ft)

Audio Frequency Response
38 Hz–15 kHz

Signal-To-Noise Ratio
A-Weighted
90 dB (typical)

Total Harmonic Distortion
ref. ±34 kHz deviation @1 kHz
<0.5% (typical)

Companding
Patented Shure Audio Reference Companding

Spurious Rejection
ref. 12dB SINAD
>80 dB (typical)

Frequency Stability
±2.5 ppm

MPX Pilot Tone
19 kHz (±1 Hz)

Modulation
FM*, MPX Stereo
*ref. ±34 kHz deviation @1 kHz

Operating Temperature
-18°C to +63°C

P3R

Active RF Sensitivity
at 20 dB SINAD
2.2 μV

Image Rejection
>90 dB

Adjacent Channel Rejection
>60 dB

Intermodulation Attenuation
>50 dB

Blocking
>60 dB

Audio Output Power
1kHz @ <1% distortion, peak power, @32Ω
80 mW (per output)

Minimum Load Impedance
16 Ω

Headphone Output
3.5 mm (1/8") stereo

Net Weight
98 g(3.5 oz.) (without batteries)

Dimensions
110 x 64 x 21 mm H x W x D

Battery Life
5–7 hours (continuous use) AA batteries

P3T

RF Output Power
10, 20, 30 mW
Note: varies by region

RF Output Impedance
50 Ω (typical)

Net Weight
783 g(27.6 oz.)

Dimensions
43 x 198 x 172 mm (1.7 x 7.8 x 6.8 in.), H x W x D

Power Requirement
12-15V DC, 260 mA Maximum

Audio Input

Connector Type
6.35 mm (1/4") TRS

Polarity
Tip positive with respect to ring

Configuration
Electronically balanced

Impedance
40 kΩ (actual)

Nominal Input Level
switchable: +4 dBu, –10 dBV

Maximum Input Level

+4 dBu	+22 dBu
-10 dBV	+12.2 dBu

Pin Assignments
Tip=hot, Ring=cold, Sleeve=ground

Phantom Power Protection
Up to 60 V DC

Audio Output

Connector Type
6.35 mm (1/4") TRS

Configuration
Electronically balanced

Impedance
Connected directly to inputs

Certifications

This product meets the Essential Requirements of all relevant European directives and is eligible for CE marking.

Meets essential requirements of the following European Directives:

- Low Voltage Directive 2006/95/EC
- R&TTE Directive 99/5/EC
- WEEE Directive 2002/96/EC, as amended by 2008/34/EC
- RoHS Directive 2002/95/EC, as amended by 2008/35/EC

Note: Please follow your regional recycling scheme for batteries and electronic waste

Conforms to the relevant requirements of regulation (EC) No.278/2009, for low voltage external power supplies.

Meets requirements of the following standards:

EN 300 422 Parts 1 and 2. EN 301 489 Parts 1 and 9.

P3T

Certified under FCC Part 74.

Certified by IC in Canada under RSS-123 and RSS-102.

IC: 616A-P3TA, 616A-P3TB, 616A-P3TD.

FCC: DD4P3TA, DD4P3TB, DD4P3TD.

P3R

Approved under the Declaration of Conformity (DoC) provision of FCC Part 15.

Complies with requirements set out in RSS-GEN.

This Class B digital apparatus complies with Canadian ICES-003. Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

This device complies with Industry Canada licence-exempt RSS standard(s). Operation of this device is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Important Product Information

LICENSING INFORMATION

Licensing: A ministerial license to operate this equipment may be required in certain areas. Consult your national authority for possible requirements. Changes or modifications not expressly approved by Shure Incorporated could void your authority to operate the equipment. Licensing of Shure wireless microphone equipment is the user's responsibility, and licensability depends on the user's classification and application, and on the selected frequency. Shure strongly urges the user to contact the appropriate telecommunications authority concerning proper licensing, and before choosing and ordering frequencies.

Information to the user

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Industry Canada ICES-003 Compliance Label:

CAN ICES-3 (B)/NMB-3(B)

Note: EMC conformance testing is based on the use of supplied and recommended cable types. The use of other cable types may degrade EMC performance.

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

Australia Warning for Wireless

This device operates under an ACMA class licence and must comply with all the conditions of that licence including operating frequencies. Before 31 December 2014, this device will comply if it is operated in the 520-820 MHz frequency band. **WARNING:** After 31 December 2014, in order to comply, this device must not be operated in the 694-820 MHz band.

Note: EMC conformance testing is based on the use of supplied and recommended cable types. The use of other cable types may degrade EMC performance.

Please follow your regional recycling scheme for batteries, packaging, and electronic waste.

重要安全事项!

1. 必须阅读这些注意事项。
2. 必须保留这些注意事项。
3. 必须注意所有警告内容。
4. 必须遵循所有注意事项。
5. 不要在靠近水的地方使用本设备。
6. 只能用干布擦拭设备。
7. 不要堵塞任何通风口。留出足够的距离，确保充分通风，并安装在符合制造商要求的位置。
8. 不要将本设备安装在任何热源（如明火、散热器、调温器、火炉或包括功率放大器在可的其它可能产生热量的装置附近。不要将任何明火火源放置在产品上。
9. 不要破坏带极性或接地类型插头的安全功能。极性插头带有两个插片，其中一个比另一个宽。接地类型插头带有两个插片和第三个接地插脚。较宽的插片或第三个插脚是为安全目的设置的。如果提供的插头无法插入您的插座，请向电工咨询如何更换合适的插座。
10. 保护电源线防止被脚踩踏或被夹紧，尤其是在插头、方便插座和机身电源线的引出处。
11. 只能使用制造商指定的连接部件/附件。
12. 只能使用制造商指定的或随设备售出的手推车、支座、三角架、托架或支撑台。如果使用手推车，在移动装有设备的手推车时应注意安全，避免设备翻落。
13. 在雷电天气或长时间不使用情况下，应拔下设备插头。
14. 所有维修均应由合格的维修人员执行。如果设备因下列情况损坏，应进行维修：电源线或插头损坏、液体泼溅到设备上或异物进入设备，设备暴露在雨水或潮湿环境中而无法正常工作，或摔落到地上。
15. 不要将本设备暴露在可能滴水和溅水的地方。不要将装有液体的容器（如花瓶等）放在本设备顶部。
16. 电源插头或电器转接头应保持在随时可用的状态。
17. 本装置的空气噪声不超过 70dB (A)。
18. 应将符合 I 类标准的设备连接到带有接地保护装置的主电源插座。
19. 为降低起火或电击危险，不要将本设备暴露在雨中或潮湿环境下。
20. 不要尝试改装本产品。否则可能会导致人身伤害和/或产品故障。
21. 应在技术规格指定的温度范围内操作此产品。

警告：本产品含有被美国加利福尼亚州确定为可能会引发癌症和出生缺陷及其它生殖问题的化学物质。

安全事项

根据危险程度和损坏严重性的不同，使用“警告”和“小心”文字对未正确使用可能导致的后果做出标识。

⚠	警告：如果没有遵循这些警告事项，在操作不正确的情况下可能会导致严重的人身伤亡事故。
⚠	小心：如果没有遵循这些警告事项，在操作不正确的情况下可能会导致常见的人身伤害或财产损失。

小心

- 不要拆开或改装设备，这样做可能会导致故障。
- 不要用力过大，不要拉扯线缆，否则会损坏线缆。
- 应让产品保持干燥，并避免暴露在极高的温度和湿度环境下。

警告

- 如果有水或其他异物进入设备内部，可能会导致起火或触电事故。
- 不要尝试改装本产品。否则可能会导致人身伤害和/或产品故障。

本设备可产生高于 85 dB SPL 的音量。 请根据您所在国家的劳动保护要求，检查允许的最大连续噪声暴露级别。

警告

在过大音量下收听音频信号可能会导致永久性失聪。应尽可能使用较低音量。长时间暴露在过高音量级别下可能会导致噪声性永久失聪(NIHL)。如果要长时间暴露在高声压级别下，为避免丧失听力，请遵循美国职业安全健康局 (OSHA) 制订的指导原则。

90 dB SPL 八小时	**95 dB SPL** 四小时	**100 dB SPL** 两小时	**105 dB SPL** 一小时
110 dB SPL 半小时	**115 dB SPL** 十五分钟	**120 dB SPL** 尽量避免，否则可能会造成损伤	

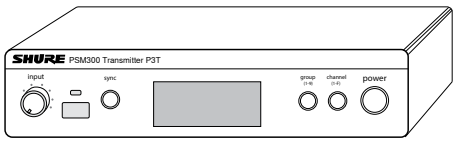
PSM®300

PSM300 个人监控系统提供无线立体声监控功能，能够提高清晰度并减少传统舞台边缘处的噪音。表演者可通过调节立体声合成和腰包的总体音量水平来制作他们自己的自定义混音，从而可以在舞台上生成较低的音量及增强音频细节。PSM300 易于设置和操作，具备一键式频率同步功能并且可在发射机和接收机之间实现可靠的无线射频稳定性。利用坚固、可靠的硬件和不断钻研的技术，Shure PSM300 个人监控系统能够极大改进舞台上的监控体验。

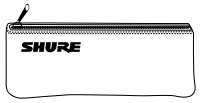
特性

- 以无线方式向舞台上的表演者发送两个频道的音频
- 可靠的射频连接覆盖范围达 300 英尺（90 米）
- 在每个腰包上生成带有可调立体声平衡或混音模式®双频道单声道合成的个人混音。
- 高达 90 dB 的信噪比可在任何音量下实现清晰、详尽的音频
- 系统适用于 Shure Sound Isolating 隔音™耳机系列
- 一键式扫描和红外同步可快速和轻松地分配干净的无线频道
- 没有复杂的菜单，而只有简单的音量和混音控制旋钮，专注高性能
- 全金属半机架发射机
- 纤薄轻巧的腰包易于连接至腰带或吉它带

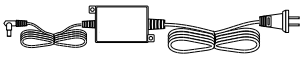
附带组件



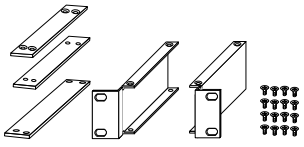
P3T 发射机



携带包

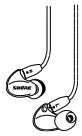


PS23 电源部件



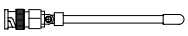
机架型硬件套件

P3R 或 P3RA 腰包接收机



SE112 或 SE215 耳机

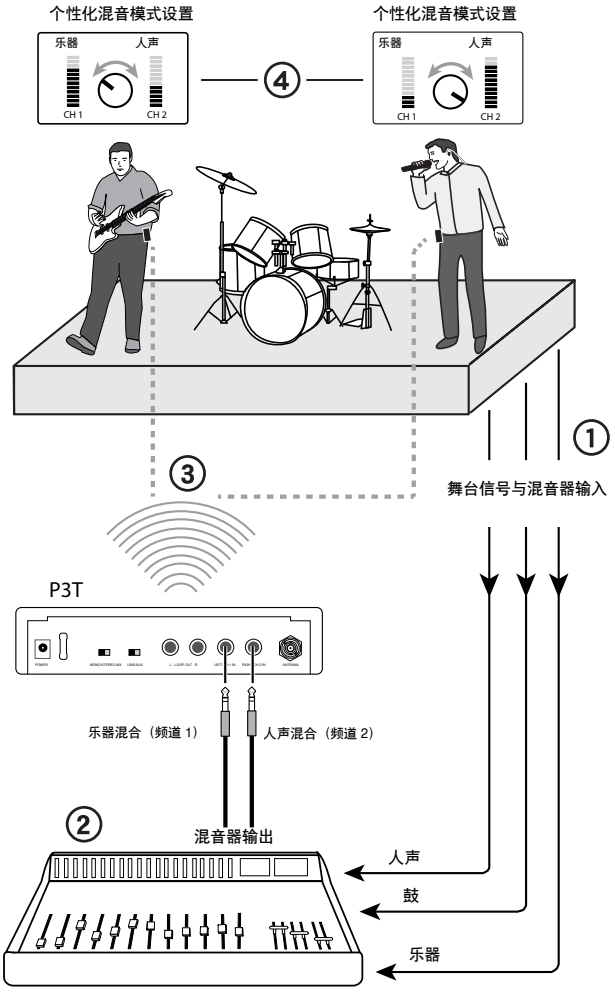
(2) 节 AA 电池*



¼ 波长天线

*在阿根廷未包括

系统概述



这些示例显示了音乐演出的典型设置。有关其他示例，请参见“系统应用”部分。

① 路由音频信号

将乐器和话筒信号从舞台发送至混音器或 PA 系统。

② 创建监控器混音

从混音器创建两种混音：一种是乐器混音，另一种是人声混音。路由其中的每种混音，以隔离混音器输出并将它们连接至 P3T 输入。

③ 发送无线音频至演出者

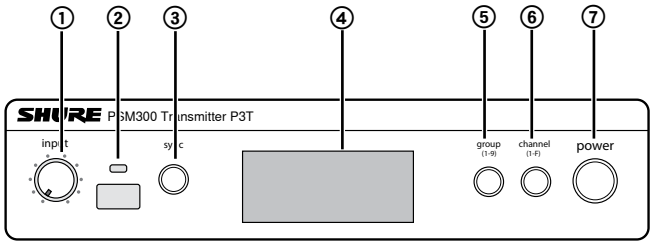
将腰包与 P3T 发射机同步，发送混音供演出者耳内监控。

④ 调整个性化混音

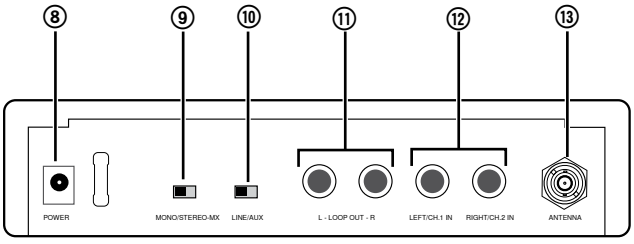
每个演出者均使用腰包上的混音模式旋钮，以便在乐器与人声之间控制其自己的混音。

硬件

P3T 发射机前后面板



P3T 前面板



P3T 后面板

① 输入电平控件
调整输入音频信号的电平

② IR 同步窗口
发送和接收组/频道数据，将接收机与发射机同步

③ 同步按钮
按下此按钮，可将接收机与发射机同步至相同的组和频道

注意：同步数据通过 IR 同步窗口发送

④ LCD 显示屏
显示音频、射频和系统信息

⑤ 组按钮
按下此按钮可滚动查看组设置

⑥ 频道按钮
按下此按钮可滚动查看频道设置

⑦ 电源
打开或关闭电源

⑧ 电源输入
连接随附的舒尔 PS23 外部电源

⑨ 单声道/立体声-混音开关

立体声混音	将双频道立体声混音发送至接收机
Mono（单声）	将汇合音频混音发送至两个接收机频道

⑩ 线路/辅助开关
使用以下项作为连接参考以调整输入敏感性：

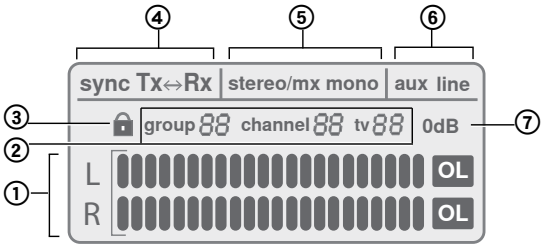
辅助设备 (-10 dBV)：	用户音频设备，比如，计算机或便携式媒体播 放器
线路 (+4 dBu)：	混音器或其他专业音频设备

⑪ 环路输出（¼ 英尺 TRS，平衡输出）
将输出连接至其他 PSM 系统或其他音频设备

⑫ 音频输入（¼ 英尺 TRS，平衡输出）
连接至调音台输出或其他音频源，以供演出者监听

⑬ BNC 天线连接端口
连接随附的 ¼ 波长天线、指向性天线或舒尔 P3AC 天线组合器

P3T 发射机显示屏



① 音频输入量表
指明音频信号电平

② 组/频道/电视设置
显示选定的组和频道设置以及相应的电视频道

注意：电视指示器仅适用于美国频道，在其他地区仍为空白

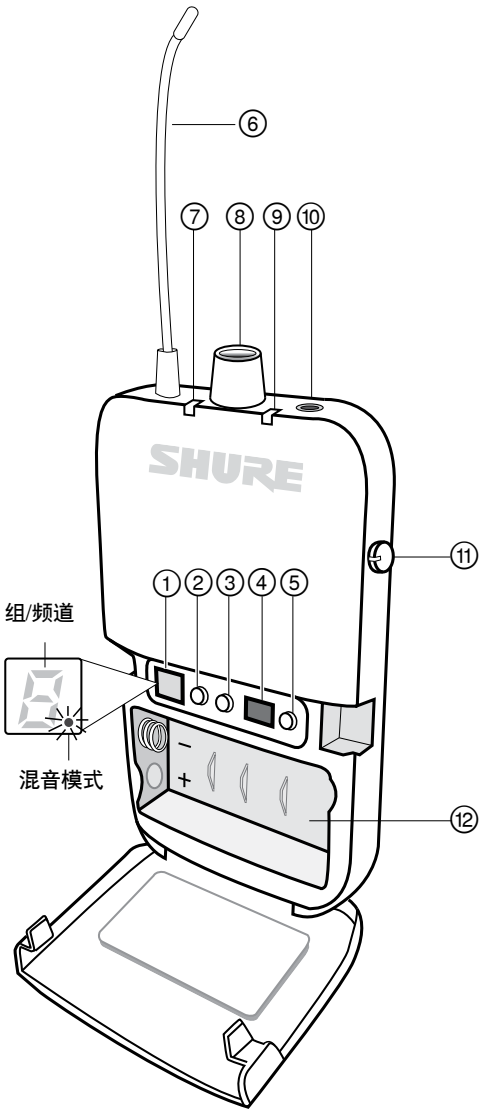
③ 锁定状态
要锁定或解锁控件，按住组和频道按钮，直到锁定图标出现/消失。

④ 同步状态
当发射机与接收机成功同步之后出现。同步方向显示为 Tx>Rx（发射机发送频率至接收机）或 Tx<Rx（接收机发送频率至发射机）。

⑤ 立体声混音/单声混音
指明发送至接收机的音频是单频道还是双频道混音（与后面板上的 Stereo-MX/Mono 开关相对应）。

⑥ 辅助设备/线路模式
指明输入敏感性设置（与后面板上的 Aux/Line 开关相对应）

⑦ 0 dB 指示器
当输入信号到达 0 dB 时开启。请参阅有关调整增益和聆听音量的章节，了解有关如何使用此图标的信息。



P3R

① 显示屏
显示组、频道和混音模式设置

② 组按钮
- 按下此按钮可显示组
- 按住此按钮可编辑组，然后在显示屏闪烁时按下可滚动

③ 频道按钮
- 按下此按钮可显示频道
- 按住此按钮可编辑频道，然后在显示屏闪烁时按下可滚动

④ IR 同步窗口
在接收机与发射机之间发送和接收同步数据

⑤ 扫描按钮
- 按住可执行**组扫描**
- 按下此按钮可执行**频道扫描**

注意：频道扫描选择当前组中最佳频道。组扫描查找有最近空闲频道的组，并选择该组中第一个可用频道。

⑥ 天线

⑦ 电源 LED 指示器
指明当接收机开启时，剩余的电池寿命以及何时激活节能模式。参见电池寿命表了解更多信息。

⑧ 电源开关/音量控制旋钮
打开/关闭接收机，并调整主要话筒音量

⑨ 射频 LED 指示灯（蓝色）
当调谐至活动发射机组和频道时亮起

⑩ 话筒输出
连接至耳机或听筒

⑪ 混音模式控制旋钮
- 在混音模式中操作时，此旋钮将频道 1 和频道 2 合成为单一混音
- 在立体声模式中操作时，此旋钮调整左/右平衡

⑫ 电池舱
可装 2 节 AA 电池

P3RA 接收机

对于要求更高的应用，舒尔提供了 P3RA 接收机，它为全金属结构，除了 P3R 接收机所包括的功能，还具备高级菜单导航功能。有关更多信息，请访问 www.shure.com。

电池寿命

LED 行为	剩余运行时（小时数）
绿色	5-7
琥珀色	1-3
红色（稳定亮起）	0.5-1
红色（闪烁）	0

在以下条件下，使用 Energizer™ 碱性电池测量电池寿命：

- 发射机敏感性：线路 (+4dBu)
- 接收机的音频输出： 100 dB 通过舒尔 SE112 耳机

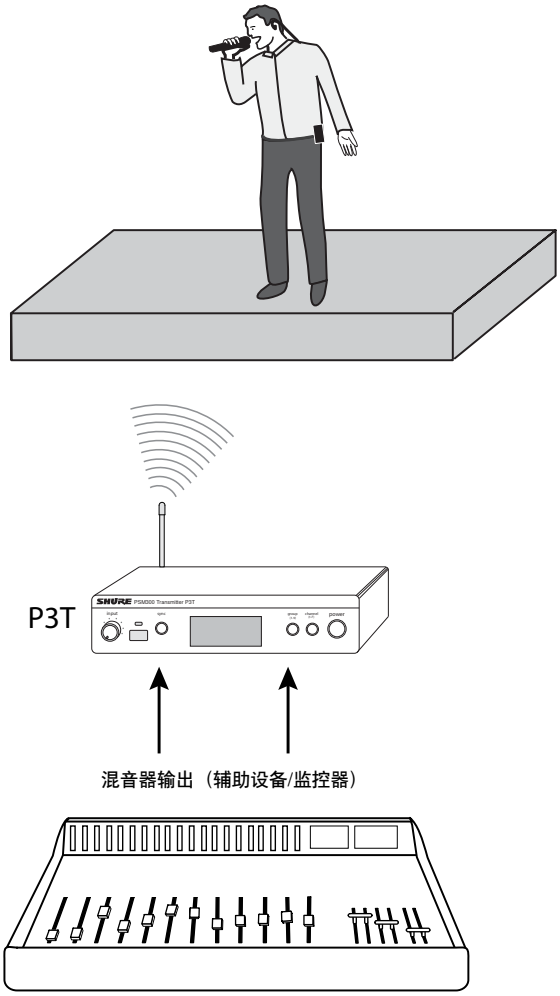
节能模式：未插入耳机时，接收机进入节能模式，以延长电池寿命。在此模式中，LED 缓慢开启/关闭，并继续显示表示剩余电池寿命的颜色。

应用

安装之前，请参阅以下 PSM300 系统方案。设置之前了解配置选项有助于确定信号路由要求并为未来扩展做好计划。有关如何设置 PSM300 系统并为监控创建混音的特定信息可在本用户指南的“系统设置和配置”以及“操作”部分中找到。

适合每位演出者的单一系统

此配置在单人演出或只有一人需要无线监控的群组演出中均能提供耳机内监控。可为多位演出者扩展此系统，只需使用与相同发射机已调谐的附加 P3R 腰包接收机。

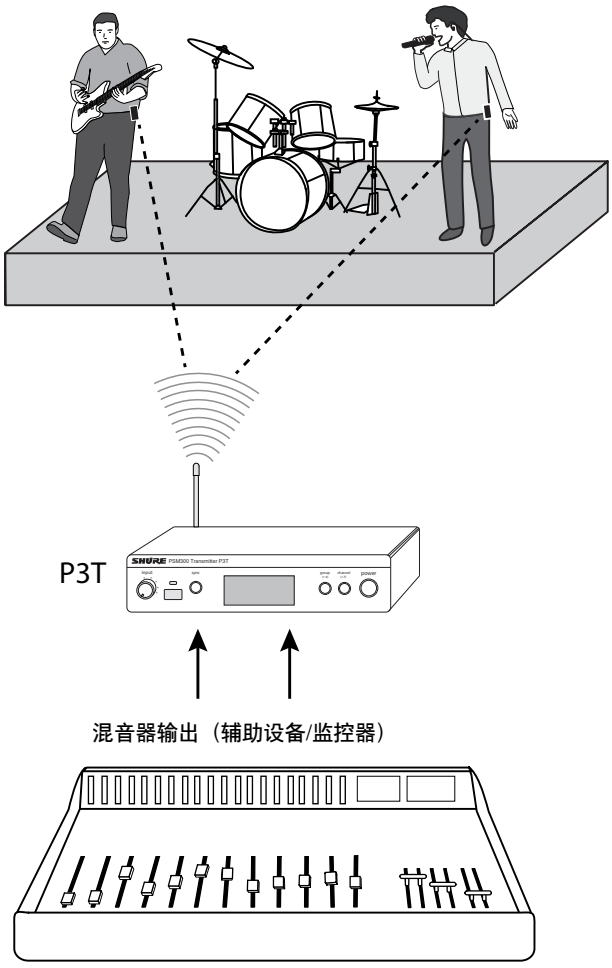


带多个接收机的单一发射机

多位演出者可从同一发射机监控音频，仍在其腰包调整信号，以个性化混音。只需将每个腰包调谐至与发射机相同的频率，并使用混音模式旋钮调整混音。

混音模式或立体声操作：

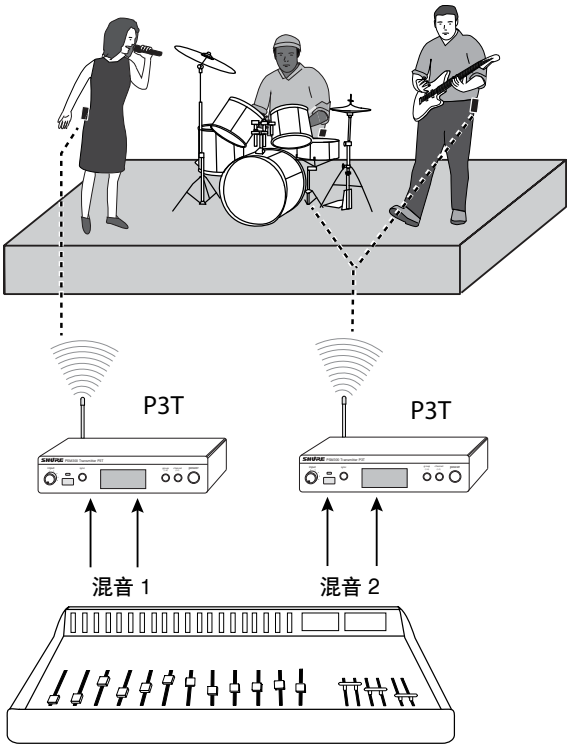
每位演出者均可选择将其腰包设置为 MixMode 或 Stereo（当发射机设置为 Stereo-MX 时）。腰包开启时默认设置为立体声。要在混音模式中操作，在开启电源时按住 GROUP 按钮。有关这些模式的信息，请参见“混音模式和立体声监控”。



带独立混音的多个发射机

当一组中多位演出者有不同监控要求时，可同时使用多个 PSM300 系统通过每个发射机发送不同的混音。此设置要求可为每个发射机提供两种监控器/辅助设备输出的混音器。

提示：为了在涉及多个发射机的应用中简化设置，舒尔提供 P3AC 天线和配电系统，仅从一个来源为多达四个 PSM 发射机供电并提供射频。



路由至外部设备的信号（组合系统）

LOOP 输出将音频传递给外部设备，比如，其他个人监控系统、录音设备或舞台监控器。LOOP 输出的信息与来自混音器的信号相同，均不受发射机音量或输入敏感性（线路/辅助设备）设置影响。因此，在使用具备一个或两个监控器/辅助设备的混音器时，LOOP 输出特别有用。

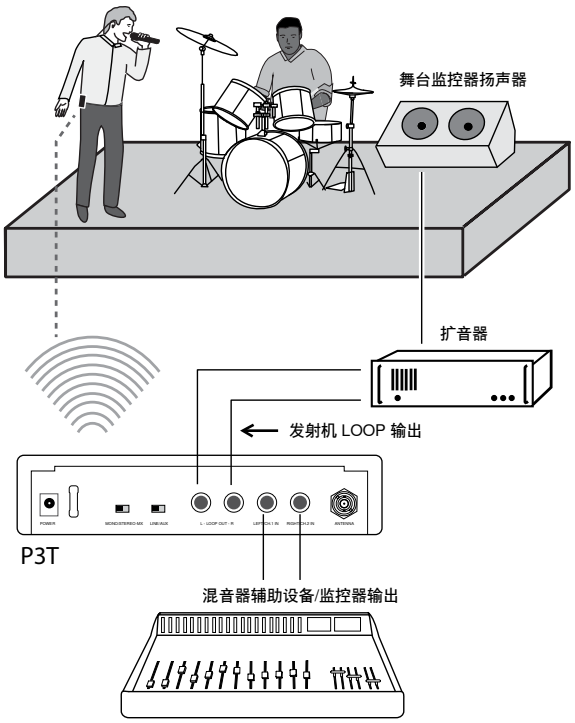
同时使用 PSM300 和扬声器：

当一些演出者使用 PSM300 无线系统，而其他演出者通过舞台上的扬声器进行聆听时，可使用组合监控系统。

注意：如果使用无源舞台监控器，必须将 P3T 输出连接至扩音器。有源（已扩音）扬声器可直接连接至 P3T 输出。

组合使用 PSM300 与其他无线监控系统

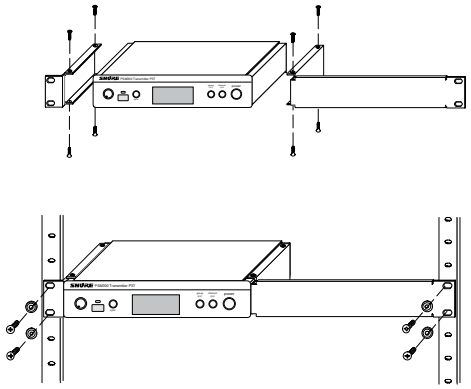
在两位演出者有其各自的无线监控系统（例如，一个舒尔 PSM300 系统和一个第三方系统）的情况下，PSM300 可将源自混音器的信号传递至第二个监控系统。

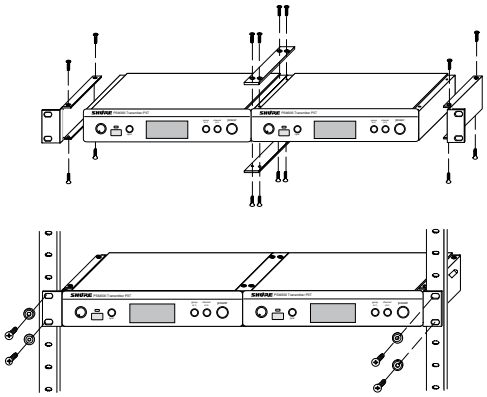


系统设置与配置

机架安装

P3T 发射机可安装在标准 19 英寸机架中。一个机架中最多可安装两台装置。如果使用多个 P3T 发射机，则可使用 Shure PA411 天线合路器系统为多达四个发射机整合并分配所有射频和电源。



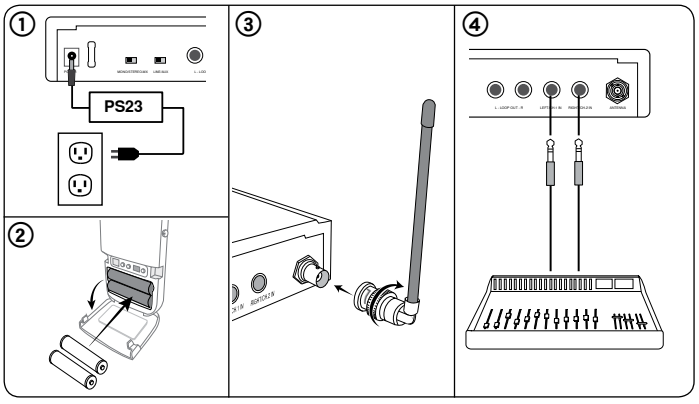


注意：在安装两台装置时始终使用两个跨式条。

电源、音频和射频连接

1. 使用电源适配器将 P3T 连接至交流电源。
2. 在腰包接收机中装入 2 节 AA 电池。
3. 将天线连接至 P3T 后面板上的 BNC 天线连接器。
4. 使用 ¼ 英寸平衡电缆将混音器或音频源连接至 P3T 音频输入。

   重要提示：连接至一个发射机输入时，请使用 LEFT/CH1 输入。将发射机设置为 MONO，以聆听接收机两个频道上的音频。



扫描最佳空闲频道

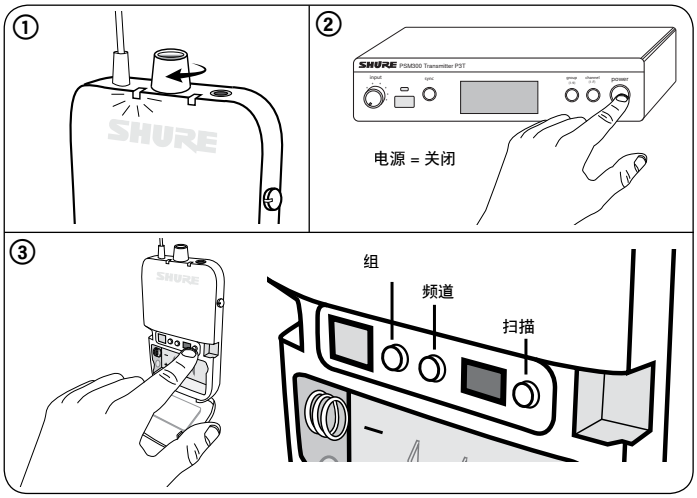
遵循这些步骤扫描射频环境，并查找操作时最佳的可用频率：

1. 开启腰包接收机和任何潜在干扰源，包括无线系统、计算机、音频设备、手机、LED 面板以及在演出期间将使用的其他电子设备。
2. 确保已**关闭** P3T 发射机。
3. 将接收机放在演出区域，按下 SCAN 在当前组设置中查找可用频道。

   如果使用多个 PSM300 系统或在无线设备音量较高的地点操作时，首先执行组扫描，然后是频道扫描：

   组扫描：按住接收机上的 SCAN 按钮。

   频道扫描：按下接收机上的 SCAN 按钮。

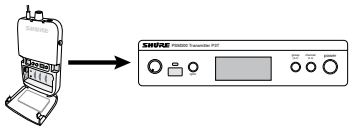


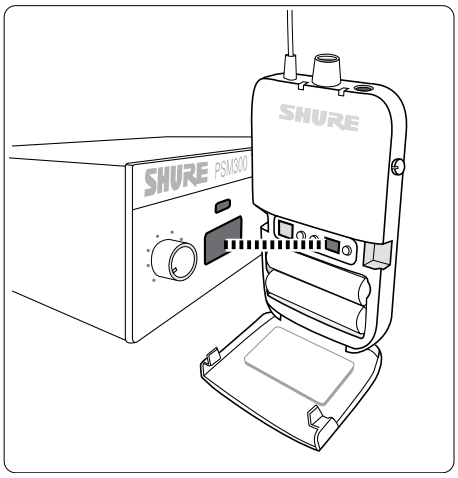
在接收机和发射机之间创建无线连接（同步）

将发射机音频传递至接收机，将发射机和接收机均调谐至相同频率。最容易的系统配置方式是使用自动同步功能：只需按下按钮，就可传输组和频道设置。根据您的系统配置，使用以下流程之一同步组件：

单一发射机和接收机

在包括单台发射机和接收机的设置中使用以下同步程序，除非在演出之前已分配组/频道设置。





调整 IR 窗口，以同步接收机和发射机

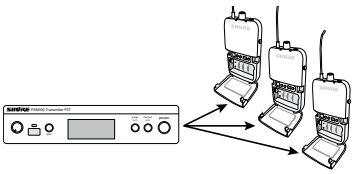
同步接收机与发射机：

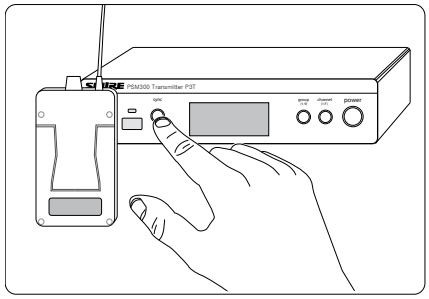
1. 在接收机上执行扫描（参见"扫描最佳空闲频道"了解最佳惯例。
2. 调整接收机与发射机上的 IR 窗口。窗口应间隔 6-11 厘米。
3. 当接收机上的蓝色射频 LED 闪烁时，按下发射机上的 SYNC 按钮。
4. 同步成功时，发射机显示 SYNC。Rx（接收机）与 Tx（发射机）之间的箭头显示同步方向。

   注意：执行扫描之后接收机上的射频 LED 闪烁时，接收机将其频率设置发射至发射机。在它停止闪烁之后，按下 SYNC，将频率设置从发射机发送至接收机。

单一发射机和多个接收机

在包括单一发射机和多个接收机的设置中或在演出之前已将特定组/频道设置分配至发射机时，使用以下同步程序。





按下 SYNC 按钮，即可传输组/频道数据

同步发射机与接收机：

1. 使用单一接收机的同步程序同步第一个接收机与发射机。建议执行扫描并使用从接收机生成的组和频道。
2. 使用 IR 同步将附加接收机设置为发射机频率（一次一个）：
   - 调整接收机与发射机上的 IR 窗口，并按下 SYNC。
   - 按下 SYNC 时，接收机 LED 不应闪烁。

   注意：如果 IR 同步不实用，也可手动调谐接收机与发射机。

多个发射机与多个接收机

1. 根据合适的同步程序设置第一个发射机和所有关联的接收机。设置附加系统时，使此第一个系统的发射机和所有接收机保持开启。
2. 使用合适的同步过程设置每个附加系统。在设置附加系统之前，始终让每一个新系统保持开启。

手动选择

如果已提前计划频率，则可在不执行扫描时手动设置组和频道。参阅本用户指南末尾的频率表，为每个组/频道设置确定频率。

要在接收机和发射机上选择组/频道：

1. 按下 GROUP 滚动查看组设置。
2. 按下 CHANNEL 滚动查看选定组内的频道设置。

操作

调整增益和聆听音量

为了实现最佳音频质量，首先从调音台或音源调整电平，然后通过 PSM300 系统调整电平。此方法与音频信号流经系统的方式相对应，将信噪比提到最高。

开始之前：从 PSM300 系统调整任何电平之前，检验混音器或来源处的所有信号路由和增益设置。如果声音在进入 P3T 发射机时失真或变弱，则信号链的其他地方可能存在需要解决的问题。

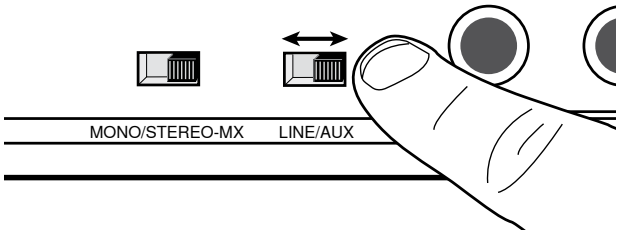
① 调整发射机级别：

输入灵敏度

选择与输入源相符的设置：

线路 (+4 dBu)	使用混音器或其他专业音频设置发送线路-电平信号。
Aux (-10 dBV)	连接用户音频设备时使用，比如，便携式音频播放器或计算机。

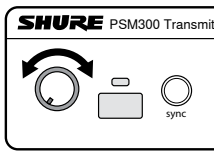
注意：使用用户音频设备时，设备的输出音量通常应调整得尽量接近最大设置，但设备输出不会出现失真或削波。这将信噪比提到最高。

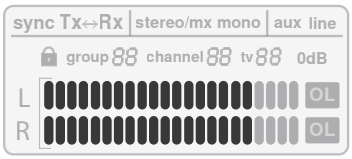


输入电平

调整电平，以使音频量表上的平均电平大约到达整个范围的 75%。最高电平应偶尔到达音频输入电平表上的 0dB 指示器，而不会到达 OL（过载）指示灯位置。

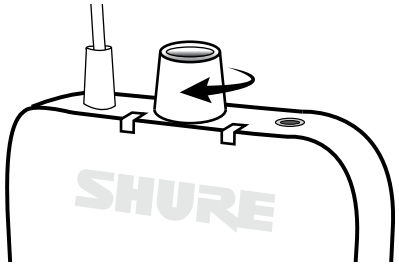
提示：如果在演出之前可以执行声音检查，则每个人应按预期的最大音量进行播放，以便在演出过程中不需要执行衰减。





② 调整接收机音量：

确定混音器和发射机的电平之后，使用腰包接收机上的听筒音量控件，调整总体聆听音量。有关调整左/右平衡或定制混音合成的信息，请参见“MixMode 模式和立体声监听”。



创建监控器混音

演出者在舞台上听到的混音通常不同于观众听到的混音。在现场录音应用中，工程师创建独立混音以发送至演出者，方法是将输入信号路由至指定的混音器输出（通常称为**监控器**或**辅助设备**输出）。

以下情景演示了用于监控混音的一般信号路径，可能未反映所有混音器类型的路由。查看您的混音器用户指南，了解详细的信号路由选项。

① 混音器频道

每个混音器频道为单个音频源控制音频处理和路由。在此示例中，人声话筒插入混音器频道。

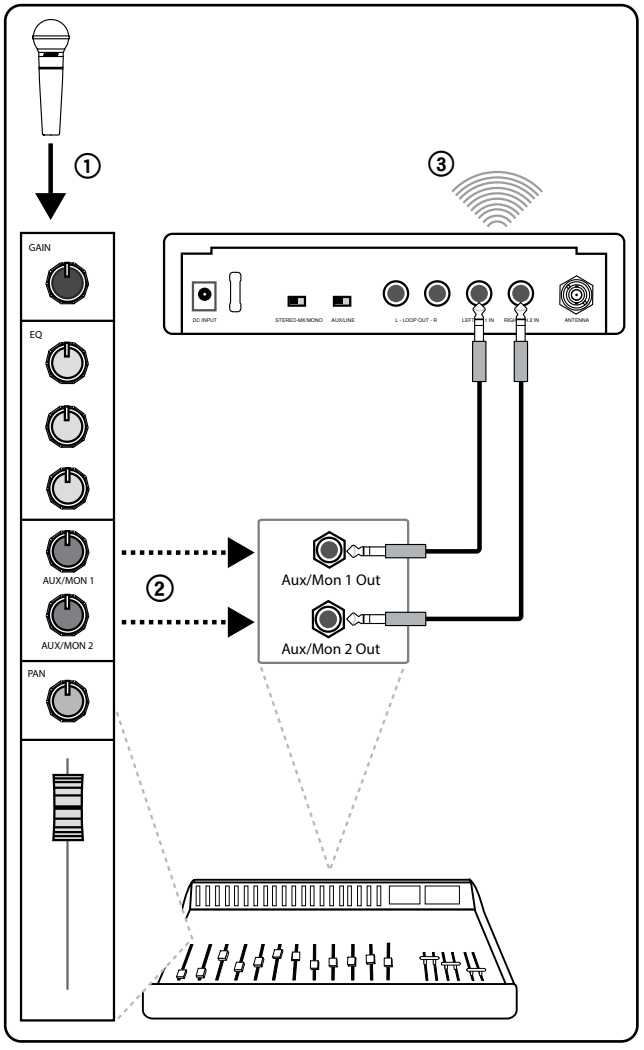
② 监控器/辅助设备发送

调整要发送至监控器/辅助设备输出的信号级别，每种级别均与独立的监控混音相对应。这些混音中的每一种均发送至 P3T 发射机上的独立频道。

注意：大多数混音器上的频道推子并不影响监控器/辅助设备的音量。

③ 无线传输

每种监控混音均通过独立频道传输至 P3R 接收机。腰包上的混音模式旋钮调整频道 1 与频道 2 之间的音频合成。



混音模式和立体声监控

将发射机设置为 STEREO-MX 时，接收机可在立体声或混音模式中运行。在涉及已与单一发射机相调谐的多个腰包接收机的应用中，一些腰包可在立体声中运行，而其他腰包在混音模式中运行。

选择模式

立体声：接收机默认设置为立体声模式。要从混音模式切换为立体声模式，只需关闭接收机，它在重新启动时返回立体声模式。

混音模式：接通电源时，按住腰包接收机上的 GROUP 按钮。接收机显示屏上的混音模式指示灯亮起，以确认设置。接收机将在关闭后返回立体声模式。

立体声

频道 1 中的音频可通过左侧耳机听到，而频道 2 中的音频可通过右侧耳机听到。在立体声模式中聆听会增加每个频道上来源之间的隔离，从而在监控多个来源时提高清晰度。在立体声模式中运行时，腰包上的混音模式旋钮调整左/右平衡。

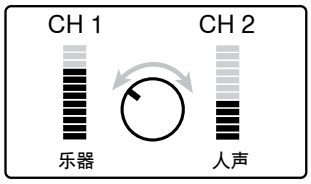
混音模式

在混音模式中，演出者可在两种监控混音之前调整合成（例如，乐器混音和人声混音）。使用混音模式时：

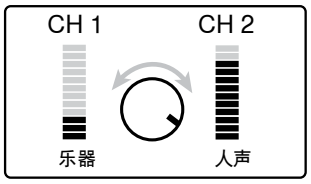
- 可通过左侧和右侧的耳机听到每种混音
- 混音模式旋钮在两种混音（频道 1 与频道 2）之间调整音量合成
- 每个腰包接收机均可拨入独特的合成，符合每位演出者的监控需求

调整混音电平

在此情景中，频道 1 为乐器混音，频道 2 为人声混音：



要听到频道 1 的更多混音，请将混音模式旋钮转至左侧。



要听到频道 2 的更多混音，请将混音模式旋钮转至右侧。

何时使用单声设置

在某些情况下，仅使用发射机上的单一输入（例如，如果混音器仅具备单一监控器/辅助设备输出）。要确保在左侧和右侧耳机上均能听到音频：

- 使用发射机上的“左侧/频道 1 ”输入
- 设置发射机至 MONO

注意：当发射机设置为单声运行时，混音模式旋钮将不影响声音。

故障排除

故障	解决方法
失真的音频	• 检查 P3T 发射机上的音量，确定音频表未到达过载指示器 • 检查调音台的传入和传出音量。如果信号链条的任何地方出现音频失真，则即使 PSM300 系统未过载，它也将失真。 • 确保接收机中电池已充满电 • 确保电缆为 1/4 英寸平衡。如果使用非平衡乐器或扬声器线缆，可能会引起噪音。 **提示：**要分辨差异，请查看电缆上的连接器。平衡线缆上的金属接插件有两个塑料环，将它分成三个独立的部分（尖端、环形和套筒）。一个非平衡线缆有一个塑料环，将金属分成两个部分（尖端和套筒）。 • 确保所有线缆插头均完全插入调音台和 P3T 输入。有时候，如果线缆插头插入，信号将变成微弱且失真。 • 确保您使用调音台的线路-电平输出。如果您有通电的调音台，请勿使用主要扬声器输出，因为它们是放大的信号，将会使 P3T 输入过载。
接收机没有声音	• 确保发射机和接收机已链接至相同的组和频道 • 确保在发射机已设置好电平,且已调高接收机上的音量 • 检查接收机是否已开启，且耳机是否已正确连接至接收机
转动 MixMode 模式旋钮不会影响声音	• P3T 后面板上的立体声-混音/单声开关可切换至单声道。要使 MixMode 模式旋钮起作用，必须将发射机设置为立体声混音。 • 检验从调音台传输到发射机的信号是否不相同 • 检查腰包是否设置为 MixMode 模式
接收机的音频输出过低	• 检查耳机连接和音量 • 如果仅发送单一频道至 P3T 发射机，则确保混音模式旋钮未转至静音频道。如果使用一个频道，将 P3T 发射机设置为单声道模式。
音频静音或射频掉频	• 执行扫描，确保接收机频率清晰可用 • 确保发射机天线与腰包接收机之间存在视线路径 • 检查正在使用的其他无线设备，比如，无线话筒，是否未遇到射频掉频 • 如果使用非系统随附的天线，则确保它为在正确频率范围内
IR 同步失败	检验接收机与发射机之间的距离是否在 6-11 厘米之间

选配附件和替换部件

腰包接收机Bodypack receiver	P3R
半机架发射机Half-rack Transmitter	P3T
通用腰包接收机Universal bodypack receiver	P3RA
天线和配电系统Antenna and power distribution system	PA411
有线 PSM 腰包Wired PSM bodypack	P9HW
动态 MicroDriver 耳机Dynamic MicroDriver earphones	SE112
动态 MicroDriver 耳机Dynamic MicroDriver earphones	SE215
带有已调谐低音端口的高清 MicroDriver 耳机High-definition MicroDriver earphones with tuned bass port	SE315
带有双 MicroDriver 的高清耳机High-definition earphones with dual MicroDrivers	SE425
带有三 MicroDriver 的高清耳机High-definition earphones with triple MicroDrivers	SE535
带有四 MicroDriver 的高清耳机High-definition earphones with quad MicroDrivers	SE846
携带/储藏袋Carrying/Storage Bag	95A2313
1/4 波长天线 (774-952 MHz)1/4 Wave Antenna (748–865 MHz) for SLX Wireless System	UA400
1/4 波长天线 (470-752 MHz)1/4 wave antenna (470-752 MHz)	UA400B

频率范围和发射机输出功率

波段	范围	输出功率 (mW)
G20	488 - 512	30
H8E	518 - 542	10
J10	584 - 608	30
J13	566 - 590	30
JB	806 - 810	10
K12	614 - 638	30
K3E	606 - 630	30
L18	630 - 654	10
L19	630 - 654	30
M16	686 - 710	30
M18	686 - 710	10
Q25	742 - 766	30
R12	794 - 806	10
S8	823 - 832	20
T11	863 - 865	10
X7	925 - 937,5	10

注意： 本无线电设备设计为用于专业音乐演出及其他相似场合。本无线电设备可能具有使用您所在地区未经授权频率的能力。请与您所在国的管理机构联系，以获得有关您所在地区无线话筒授权使用频率的相关信息。

PSM300

射频载波范围
488-937.5 MHz
根据地区不同有所差别

兼容频率
每波段
最大 15

调谐带宽
24 MHz Maximum
注意： 根据地区不同有所差别

工作范围
取决于环境
90 米 (300 英尺)

音频响应
38 赫兹–15 千赫兹

信噪比
A-加权
90 dB (典型)

总谐波失真
参考 ±34 kHz 偏移 @1 kHz
<0.5% (典型)

扩展
获得专利的音频参考扩展功能

假象谐波
参考 12dB SINAD
>80 dB (典型)

频率稳定性
±2.5 ppm

MPX 导频音
19 千赫兹 (±1 赫兹)

调制
FM*, MPX 立体声
*参考 ±34 kHz 偏移 @1 kHz

操作温度
-18°C 到 +63°C

P3R

有源射频灵敏度
在 20 dB SINAD 下
2.2 μV

镜频抑制
>90 dB

临近频道干扰抑制
>60 dB

互调衰减
>50 dB

阻滞
>60 dB

音频输出功率
1kHz @ <1% 失真，峰值功率，@32Ω
80 mW (单位输出)

最小负载阻抗
16 Ω

耳机输出
3.5 毫米（1/8 英寸） 立体声

净重
98 克(3.5 盎司) (无电池)

外观尺寸
110 x 64 x 21 毫米 高度 x 宽度 x 深度

电池使用时间
5–7 小时 (持续使用) 五号电池

P3T

射频输出功率
10, 20, 30 mW
注意： 根据地区不同有所差别

射频输出阻抗
50 Ω (典型)

净重
783 克(27.6 盎司)

外观尺寸
43 x 198 x 172 毫米 (1.7 x 7.8 x 6.8 英寸), 高度 x 宽度 x 深度

电源要求
12-15伏（直流）, 260 mA Maximum

音频输入

接头类型
6.35 毫米（1/4 英寸）TRS

极性
“尖端”带有相对于“环”的正电压

配置
电平调节

阻抗
40 kΩ (实际)

标称输入电平
可切换: +4 dBu, –10 dBV

最大输入电平

+4 dBu	+22 dBu
-10 dBV	+12.2 dBu

插针分配
尖端=hot，环=cold，套筒=接地

幻象电源保护
最多 60 V DC

音频输出

接头类型
6.35 毫米（1/4 英寸）TRS

配置
电平调节

阻抗
直接连接到输入

认证

本产品符合所有相关欧盟法规的基本要求，并且允许使用 CE 标志。

符合下列欧盟指令的基本要求：

- 低电压指令 2006/95/EC
- R&TTE 指令 99/5/EC
- 2008/34/EC 修订的 WEEE 指导原则 2002/96/EC
- 2002/95/EC 修订的 RoHS 指导原则 2002/95/EC

注意： 请遵循您所在地的电池和电子废弃物回收方案

符合低压外部供电 (EC) No.278/2009 相应法规的要求。

符合下列标准的要求：

EN 300 422 第 1 章和第 2 章. EN 301,489 第 1 章和第 9 章.

P3T

已通过美国联邦通讯委员会第 74 章的认证。

经过加拿大 IC 认证符合 RSS-123 和 RSS-102。

IC: 616A-P3TA, 616A-P3TB, 616A-P3TD.

FCC: DD4P3TA, DD4P3TB, DD4P3TD.

P3R

符合美国联邦通讯委员会法规第 15 章关于合格声明 (DoC) 的要求。

符合 RSS-GEN 中所述要求。

This Class B digital apparatus complies with Canadian ICES-003. Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

本设备除 RSS 标准以外，符合加拿大工业部许可证的要求。必须满足以下两个条件才能够操作本设备：(1) 本设备不产生干扰，并且 (2) 本设备必须能够接受包括可能导致设备意外操作的任何干扰。

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

重要产品信息

许可信息

许可授予：本设备在一些特定地区使用可能需要获得主管部门许可证。请向您所在国家的主管部门咨询相关要求。未经舒尔公司明确许可的修改或改装会使你操作本设备的授权失效。 获得舒尔无线话筒设备的授权是用户的责任，许可情况取决于用户类型和应用情况以及选择的频率。舒尔强烈建议你在选择和订购频率之前，应与相关的无线电管理机构联系，以了解许可授予情况。

用户信息

本设备已经过测试，符合 FCC 法规第 15 章有关 B 类数字设备的限制。这些限制专适用于在住宅内安装此设备，能够为用户提供免受有害干扰影响的足够保护。本设备产生、使用并可能发射无线电频率能量，如果没有按照要求安装和使用设备，可能会对无线电通讯产生有害干扰。但是，并不保证本设备在特定的安装情况下不产生干扰。如果本设备确实对收音机或电视机的接收产生有害干扰，可以通过关闭本设备然后再打开的方法来确定干扰，建议用户通过以下一种或多种方法自行排除此干扰。

- 调整接收天线的方向或位置。
- 增大设备和接收机之间的距离。
- 将设备连接到与接收机不同的电路插座。
- 可以向经销商或有经验的无线电/电视工程师咨询以寻求帮助。

加拿大工业部 ICES-003 合规标签：

CAN ICES-3 (B)/NMB-3(B)

注意： EMC 符合性测试是使用提供的和推荐的缆线类型完成的。使用其它缆线类型可能会降低 EMC 性能。

未经制造商明确许可的修改或改装会使用户操作本设备的授权失效。

澳大利亚无线警告

此设备在 ACMA 级许可下运行且必须符合所有该许可的所有条件，包括运行频率。在 2014 年 12 月 31 日之前，如果此设备运行在 520-820 MHz 频带，则它将符合条件。**警告：**在 2014 年 12 月 31 日之后，为了符合条件，此设备不得运行在 694-820 MHz 频带。

注意： EMC 符合性测试是使用提供的和推荐的缆线类型完成的。使用其它缆线类型可能会降低 EMC 性能。

请遵循您所在地的电池、包装物和电子废弃物回收标准。

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